

TO: Deputy Assistant Secretary for Office for Facilities
Management and Policy

FROM: Acting Director
Office of Public Health

SUBJECT: FY 2003 Energy Report

I am responding to the November 3 memorandum from Mr. William Stamper, Deputy Assistant Secretary for Office for Facilities Management and Policy, requesting the FY 2003 Energy Report.

These reports are being sent electronically to Mr. Scott Waldman, Department of Health and Human Services Energy Officer, per instructions in your guidance. The reports are organized in the following manner:

- A. OPDIV Annual Energy Report
- B. FY 2003 OPDIV Energy Management Data Report
- C. FY 2003 OPDIV Energy Scorecard
- D. Industrial and Laboratory Facilities Inventory
- E. OPDIV Implementation Plan

If you have any questions regarding the reports, please call LTJG Allen Bollinger, Office of Environmental Health and Engineering, on (301) 443-1367.

Gary J. Hartz
Assistant Surgeon General

FY 2003 Annual Energy Narrative Report

I. Management and Administration

A. Energy Management Infrastructure

1. **Senior Agency Official:** The senior Agency Official is the Director, Division of Facilities Operations. This person supervises the Agency's Energy Coordinator.
2. The Agency Energy Team consists of 12 Area Offices (Aberdeen, Albuquerque, Alaska, Bemidji, Billings, California, Nashville, Navajo, Oklahoma City, Portland, Phoenix, and Tucson) and 2 Regional Offices (Engineering Service (ES) in Dallas and Seattle). The 12 Area Offices and 2 Engineering Services Offices each have a designated Energy Coordinator who is supervised by the Area Facility Engineers or ES Directors. The energy team is:

Area	Energy Coordinator
Aberdeen Area Office	Marty Laroche
Albuquerque Area Office	Deanne Waconda
Anchorage Area Office	Gary Kuhn
Bemidji Area Office	Ken Olson
Billings Area Office	Ron Klem
California Area Office	Kerry Gragg
Division of ES - Dallas	Suresh Shah
Division of ES - Seattle	John Rogers
Headquarters	Allen Bollinger
Nashville Area Office	George Styer
Navajo Area Office	Richard Wermer
Oklahoma Area Office	Ken McKenzie
Phoenix Area Office	Eugene Price
Portland Area Office	Dale Mossefin
Tucson Area Office	Bob Drummond

3. Area Office Energy Program:

- **Aberdeen**-- The Mechanical Engineer at the Area Office is responsible for energy management activities in the Aberdeen Area. The energy program is set up to receive energy consumption data from each facility on a quarterly basis. The data is compiled and analyzed by the Mechanical Engineer. A new program will be implemented in FY 2004 since the Mechanical Engineer retired in the 4th quarter of FY 2003.
- **Alaska**-- Alaska employs an Area energy coordinator to collect and report data to the Regional Health Organizations (RHO's) and IHS Headquarters. The coordinator seeks energy saving program and project opportunities and works directly with the RHO Facility Managers to implement energy conservation measures and training. The Alaska Area has concluded six energy audits out of the seven hospital campuses serving Alaska Natives and American Indians in Alaska. These six audits identified \$2,400,000 in Energy Conservation Measures (ECM's) that could potentially save

\$588,000 dollars annually. Of these ECM's the facility maintenance staff embarked upon \$1,000,000 of energy saving project in 2002. Projects anticipated for the 2003 fiscal year include project cost that could exceed 20 percent of the Routine Maintenance & Improvement (M&I) budget. These FY02 & FY03 ECM's would yield annual savings of \$588,000 and would potentially pay back in about four years. Funding for this collective magnitude of cost would need to be sought outside of the IHS M&I Project Pool, or at least supplemented. The annual energy consumption increased overall by about three percentage points over FY02 compared to FY01, this is largely due to the fact that a great portion of the health care facilities are old and are being brought up to current AHA and ASHRAE Standards. This means greater emphasis on indoor air quality (IAQ) and Air Conditioning; and thus more energy consumption is a natural result of improving these systems in health facilities. Therefore, to a large degree, the ECM's implemented just offset the increase energy requirements for providing the proper patient environment. Some of these energy increases are to be anticipated in the future, since all buildings do not yet meet the IAQ and Air conditioning requirements.

- **Albuquerque**-- The Area Energy Management Program is coordinated through the designated Area Energy Coordinator under the supervision of the Area Health Facilities Director. The Energy Coordinator is responsible for preparing all reports and coordinating activities with the service units, Area Project Engineers, and Area Finance. The Service Unit Facility Managers and Engineers are responsible for managing their energy consumption and managing or assisting the Area Project Engineers with energy projects and any energy related projects.
- **Billings**-- Ron Klem, Energy Coordinator, compiles total dollars spent through CORE for each utility in the Billings Area. After downloading the Consumer Price Index for the average cost of each utility in the Montana/Wyoming Regions, he calculates the total usage for the Area. These are the numbers that are then used to report to Headquarters. Obtaining direct utility data for each building is currently too time prohibitive, but the Area Office has been tracking actual utility usage for our three hospitals and the Lamie Deer Health Center for the past couple of years. In addition, we have actively been modifying the automated building control systems to optimize energy efficiency at those buildings as well as been making operational recommendations to the facility staff. This includes as much in-house commissioning as possible with the use of test and balance equipment, i.e. flow hoods, water meters. Training has been integral part of the process.
- **Oklahoma City**-- Efforts to reduce energy and water consumption via awareness campaign will continue in FY2004. The Energy Team consists of the Area energy coordinator, a mechanical engineer, and facility managers.
- **Phoenix**-- Each Service Unit facility Manager is the energy coordinator for their Service Unit. There nine Service Units. All

energy information is transmitted to him. He is responsible for reduction of energy and water consumption. The tribal contracted facilities are not included. The operations of these facilities are autonomous and are not a part of the Phoenix Area Energy program. They only report their annual energy consumption.

- **Portland**-- In the Area Office a facility engineer serves the role of energy coordinator. This individual is responsible for the annual energy reports and the bulk of energy related projects.
- **Tucson**-- The Energy Management Officer works under the direction of the Area Facilities Engineer. Efforts are coordinated thru periodic meetings with the Facility Managers. In FY 2003, work began on an energy audit that will incorporate LEED for Existing Building criteria. It is anticipated that projects will be identified in 2004 and incorporated into new and existing projects.

B. Management Tools

1. Awards:

- **Albuquerque**-- Departmental awards and the Annual Area Director's Awards Program are used to recognize individuals or programs that are instrumental in improving energy efficiency. The Albuquerque Indian Hospital Facilities Maintenance Staff was recognized with a DHHS award for the successful implementation and operation of HVAC, DDC, and geothermal improvements. An on the spot award was provided to an Area Employee for the management of the area energy program.
- **Billings**-- There are no awards provided by the Billings Area Office, however, we are looking into the feasibility of using Utility Dollars to purchase equipment such as new drills for those Service Units that show a decrease in energy consumption and use this as an incentive/reward.
- **Portland**-- On-the-spot awards have been provided to Service Unit employees who have implemented and demonstrated successful energy management policies and practice. Personnel are also nominated for national, agency, regional, or local recognition for outstanding contributions in conserving energy (One such nomination was made in FY2003).

2. Performance Evaluations:

- **Aberdeen**-- The Area Office Mechanical Engineer is responsible for energy management activities as stated in his job description and it is part of his annual performance evaluation. This will change in FY 2004.
- **Albuquerque**-- Position descriptions and performance evaluations of those implementing the Executive Order do not specifically address energy efficiency, water conservation, or solar and other renewable energy projects. However, such actions are noted in performance evaluations since they are normal to the positions.

- **Tucson**-- Energy conservation elements are included in the position descriptions for facility managers.

3. Training Education:

- **Aberdeen**-- The Area has an ESPC with Johnson Controls Inc. The contract requires federal personnel to implement energy conservation measures at the facilities involved. Energy savings measurement and verification is required by the contract.
- **Alaska**-- ANTHC provides energy management and conservation training to staff engineers. ANTHC engineers participate in energy conservation seminars and workshops. Energy conservation elements of HVAC and DDC systems are also covered at these seminars and workshops. Headquarters' staff has trained facility managers and service unit staff on energy awareness. The FEMP energy awareness publications and information is channeled to the RHO Facility Managers for energy awareness. On-site energy training is conducted for FM and Staff at the regional hospitals.
- **Albuquerque**-- Training is available to all service unit facilities maintenance staff. Five maintenance employees attended various HVAC, electrical, and plumbing training courses throughout the year. These courses were selected to enhance their skills or to orientate the staff with new equipment/technology.
- **Bemidji**-- Energy conservation and management training opportunities have been announced to staff.
- **Billings**-- Training is available to all service unit facilities staff for the control and operation of building HVAC systems. The Billings Area utilizes direct digital control for all of its larger facilities. Control system training that incorporates better energy management is provided to facility managers.
- **Oklahoma City**-- The Area Energy Coordinator gave a presentation on the Energy Star program at our facility managers meeting. Information on eligibility criteria, data needed, and score interpretations were presented. The Energy Star Upgrade Manual for Buildings was discussed which included topics such as: business analysis overview, financing, recommissioning, lighting, load reductions, fan systems and heating/cooling. Implementing building tune-up strategies were discussed along with "best ways to save". The Area Energy Coordinator gave a presentation at our facility managers meeting concerning his role on the Sustainability Workgroup regarding refrigerants, mechanical/electrical systems and potential applications to OKC Area projects. Most of this presentation focused on an overview of Leadership in Energy and Environmental Design (LEED) Version 2.1 along with an overview of 2 main ASHRAE standards which are referenced in LEED Version 2.1 which are ASHRAE Standard 62-2001 (Ventilation for Acceptable Indoor Air Quality) and ASHRAE/IESNA Standard 90.1-1999 (Energy Standard for Buildings Except Low-rise Residential Buildings). An actual copy of Executive Order 13123 was distributed to facility managers at this meeting.

- **Phoenix**-- For FY 2001 no formal energy related training is scheduled for Phoenix Area personnel. The service unit facility managers will continue receiving the Department of Energy FEMP FOCUS publication.
- **Portland**-- The Portland Area Office sponsored a 3-day HVAC seminar in FY 2001. Each seminar discussed elements critical to effective energy conservation. Over 30 Service Unit and Area personnel attended. Annual Areas meeting discuss energy conservation topics.
- **Tucson**-- Training needs are re-assessed continually and training plans submitted annually. Specific courses included HVAC, air conditioning, appliance, and furnace servicing.

4. **Showcase Facilities:**

- **Albuquerque**-- The Albuquerque Indian Hospital was recognized as an Energy Star building for FY 2002. The hospital is eligible for the same recognition for FY 2003. All phases of the hospital renovation were completed earlier in the year, which allowed for full implementation of the upgrades. This helped raise the score of the hospital as displayed in the Portfolio Manager. An application will be submitted on behalf of the hospital for the Energy Star Award.
- **Billings**-- The Blackfeet Hospital was recently awarded EPA's 2002 Energy Star Label.
- **Nashville**-- Extensive energy improvement projects have been conducted at the Nashville Area hospitals. Cherokee Hospital now has additional insulation installed on the roof and stone fascia areas of building. HVAC systems have been refurbished to improve efficiency and are controlled by DDC systems. At Choctaw Health Center a new white single-ply membrane roof was installed with six inches of insulation. New double glazed windows with sun screening were also installed. All rooftop mounted A/C units were replaced with highly efficient units.
- **Oklahoma City**-- The new Pawnee Health Center is being constructed by the Pawnee Nation that has utilizes a geothermal loop system and exhaust fans with energy recovery coils.
- **Portland**-- The David C Wynecoop Memorial Clinic was recognized by DOE as a Showcase Facility in FY 2002.

II. **Energy Efficiency Performance**

A. **Energy Reduction Performance:**

1. **Standard Buildings:** IHS has been classified as Energy Intensive.

2. **Industrial and Laboratory Facilities:**

IHS facilities have all been classified as energy intensive. IHS uses Btu-per-gross-square-foot (Btu/GSF) as a broad indicator of energy efficiency in measuring performance toward the goals for Energy-Intensive facilities and Standard facilities. The percentage

change from 1990 (242,633 Btu/ Ft²) to 2003 (199,616 Btu/ Ft²) is 18%.

3. **Exempt Facilities:** No information to report.

4. **Tactical Vehicle and Equipment Fuel Use:** No information to report.

B. Renewable Energy:

1. **Self-Generated Renewable Energy:**

- **Albuquerque**-- A project to improve the performance of the solar energy collection system at the ACL hospital is under development. The system is situated on the roof of the hospital and a major reroofing project is planned that will affect the solar panels.
- **Nashville**-- The Nashville Area hospitals have solar collection systems that reduce heating costs of the facilities. When the systems are fully functional, they reduce energy usage up to 10 percent.
- **Oklahoma City**-- Energy use estimates from the designers of the geothermal system at Pawnee have been requested in order to demonstrate how much money a geothermal system will save over time when compared to a conventional HVAC system.

2. **Purchased Renewable Energy:**

- **Albuquerque**-- A major utility provider in the Albuquerque Area has recently implemented an alternative wind energy program. The area is working with the Utility Company Administration to review costs, usage, benefits, etc.

3. **Million Solar Roofs (MSR):**

- **Albuquerque**-- The Santa Fe and ACL hospitals were constructed and equipped with solar energy collection systems. ACL continues to utilize the collection system. Both ACL and Santa Fe hospitals utilize solar powered outdoor lighting in the parking areas.
- **Nashville**-- The Cherokee Hospital and Choctaw Health Center have solar systems that are about twenty years old.
- **Oklahoma City**-- Revamping of solar panels that used to be used to preheat domestic water was identified as a possible energy conservation measure via Super ESPC in FY2003 but it is not being implemented.

C. Petroleum:

Year	GSF	Oil 1000 Gal	Oil Cost in 1000s	NG 1000 CuFt	NG Cost in 1000s	LPG Prop 1000 Gal	LPG Prop Cost in 1000s
1990	5,964,788	1,201	\$1,244.00	706,075	\$1,757.00	1,444	\$755.00
2002	6,567,787	1,271	\$1,676.00	529,351	\$2,004.00	1,185	\$855.00

**Percent
Change**

10

6

-25

-18

D. Water Conservation.

- **Alaska**-- Was analyzed during the hospital comprehensive energy audits conducted in 2002.
- **Albuquerque**-- Water usage is monitored at each service unit and costs have been estimated for the installation of water meters at those sites where meters are not available. The baselines previously established have been reviewed and updated at the unmetered locations. Instantaneous water heaters have been installed at several health centers.
- **Bemidji**-- Water softener units that utilized reduced volume regeneration cycles were installed.
- **Oklahoma City**-- Opportunities for water conservation were identified for the Anadarko Indian Health Center and the Lawton Indian Hospital via a SAvEnergy Audit that was funded by the Department of Energy in FY03. Water Conservation screening was completed for both of these facilities by collecting information regarding water use and water utilities from previous bills, conducting a walk-through survey with the facility manager to understand how water is used at the sites, documenting equipment that uses water, and inputting the site survey data into a "Watergy" computer program for the analysis. Two potential conservation opportunities were identified for Anadarko, these include installing 17 low flush toilets and urinals with a simple payback of 8.2 years and installing 2 faucet aerators with a simple payback of 1.1 year. No water conservation strategies resulted from the Watergy screening for Lawton but interviews with the facility maintenance personnel identified that water consumption for the cooling tower was high and a filter in the condenser water loop along with repair of the total dissolved solids controller would reduce the bleed down of the cooling tower and thus reduce the amount of make-up water currently required. A condenser water filtration system which features an electronic backwash controller was installed for the new cooling tower at Claremore and the amount of rinse water is reduced with the way the screens are now cleaned. Guidance on water-conservation best management practices from FEMP's web site was provided to facility managers.
- **Portland**-- The Portland Area Office provides service units with technical support to improve water efficiency. All new construction and remodeling projects, which involves the consumption of water, will use water conservation devices.
- **Tucson**-- The facilities are replacing outdated toilets, faucets, showerheads and other devices with water saving products. The facilities are reviewing watering schedules and desert landscaping to reduce water consumption. Amount of water spent maintaining landscaping is decreasing through more efficient use. Replacement of irrigation system with lower usage system will be accomplished when funding becomes available. Amount of landscaping to be maintained will decrease when proposed replacement facilities come on line.

III. Implementation Strategies

A. Life-Cycle Cost Analysis.

- **Aberdeen**-- The ESPC contract with Johnson Controls Inc. included a life cycle cost analysis for energy conservation opportunities at all 17 Aberdeen Area facilities. The contract was implemented at nine locations, which were determined to be cost effective for the payback time.
- **Albuquerque**-- The project engineers perform a life cycle cost analysis when reviewing products and services.
- **Bemidji**-- Life-cycle cost analysis is required for all contract services and for government procurement of products, services, construction, and other projects to lower energy and water consumption.
- **Billings**-- Life Cycle Cost Analysis is performed on as-need basis with an ROI greater than 1 as a baseline.
- **Nashville**-- Life-Cycle Cost Analysis can determine the priority of energy projects. The shorter the pay back period the more attractive the project becomes. Most projects that we have funded provide pay back within five years.
- **Oklahoma City**-- A study was performed at the Claremore Indian Hospital to determine the mechanical system requirements for the building versus what the current systems can provide. System upgrade options were presented and evaluated. The "best" solution was chosen based on life-cycle analyses. We will be replacing the cooling tower, chillers, and pumps in early FY-2003.
- **Portland**-- Life cycle cost analysis is done on large projects to assure 10-years paybacks are anticipated. For energy conservation projects (less than \$25,000), technologies with proven paybacks (Energy Star products) are used to assure energy efficiency.
- **Tucson**-- Life cycle cost analysis included in building procurement documents. Energy efficiency and maintenance cost estimates are considered when procuring equipment.

B. Facility Energy Audits: 728,798 GSF of facilities were audited in FY2003 this constitutes 11% of IHS space. To date 5,133,887 GSF of facilities have been audited this constitutes 78% of IHS space.

C. Financing Mechanisms.

- **Aberdeen**-- The Aberdeen Area and Engineering Services-Seattle negotiated an ESPC with Johnson Controls Inc. in July 2001. The ESPC started in October 2001 with a 15 year contract period.
- **Bemidji**-- ESPCs were considered, but viewed as too costly. The investment to savings ratio was not adequate. It was doubtful if some projects would result in sufficient savings to pay the contractors demanded payments.

- **Billings**-- ESPCs and UESCs are not available or are not feasible at our isolated locations.
- **Oklahoma City**-- Use of the DOE Super ESPC contract by the OKC Area I.H.S. and the Cherokee Nation of Oklahoma gained renewed interest in FY03. Funding was requested in the fourth quarter of FY02 for SAVEnergy Audits at the Anardarko Indian Health Center and the Lawton Indian Hospital. Funding was approved from the Department of Energy for these SAVEnergy Audits in the first quarter of FY03 and SAVEnergy Audits were completed at these 2 facilities in the first quarter of FY03.
- **Tucson**-- Funding for all energy conservation work is currently from M&I or M&M funds.

D. Energy Star® and Other Energy-Efficient Products.

- **Alaska**-- Information is disseminated to MIRAC and service unit staff relative to energy efficient products.
- **Albuquerque**-- Energy efficiency and cost savings are considered by personnel recommending and specifying products for procurement. Information on products is continuously forwarded to the project engineers and a record of these products is kept updated and available in the area HF library.
- **Bemidji**-- Energy efficiency is a routine determinant of product choices.
- **Billings**-- All designs provided by the Billings Area Facilities Management staff use MASTERSPEC for specification writing. MASTERSPEC is updated quarterly with the latest energy efficient products.
- **Phoenix**-- With all new projects, procurement of Energy Star and other energy efficient products are incorporated into specifications.
- **Portland**-- The Portland Area Indian Health Service Guidelines establishes model operations and maintenance purchasing procedures for increased energy efficiency with the service units.
- **Tucson**-- The use of Energy Star products are considered for most purchases and during the conceptual planning phases of projects. Energy Star products are purchased if feasible.

E. Energy Star® Buildings.

- **Albuquerque**-- The Albuquerque Indian Hospital was designated as an Energy Star building in FY 2002. Utility data was recently updated for all the Albuquerque Area hospitals and one health center. The Portfolio Manager shows that the Albuquerque Indian Hospital is eligible to reapply for an Energy Star Building Label. An application will be submitted for consideration.
- **Billings**-- The Billings Area currently has three hospitals within EPA's Energy Star Label Database. The Blackfeet Hospital is the

only facility ranked high enough at a 76 to obtain the Energy Star Label. That is 33 percent of the Billings Area applicable buildings currently meeting the Energy Star Building criteria.

- **Portland**-- The Neah Bay Service Unit is eligible to be officially designated as an Energy Star Building. This constitutes 11% of the Portland Area facilities.

F. Sustainable Building Design

- **Aberdeen**-- The Area is aware of sustainable design building principles.
- **Alaska**-- Designs for remodeling or additional space require energy efficient materials and equipment. Alaska Area engineers insure that care is taken in selecting equipment that is energy efficient.
- **Albuquerque**-- All new construction incorporates energy efficient materials, equipment, and construction.
- **Bemidji**-- Building design contracts are required to follow sustainable building design principles.
- **Nashville**-- The Nashville Area does not plan to construct any new government owned facilities. Any new facility construction in the Nashville Area is limited to construction by Title I and III Tribes. Assistance is offered for design through the Engineering Services office in Dallas. The design is review by both the Area staff and the ES Dallas staff. Tribes have used design review services in the past, but not design services.
- **Navajo**-- The Health Facilities Planning Manual is used for all renovation and new facilities construction. Energy efficiency is incorporated into the design, as is the use of energy efficient products.
- **Portland**-- New facility construction and remodeling will use new practices and products for energy efficiency and water conservation.
- **Tucson**-- Currently only one facility is under design. The building was reviewed informally for sustainable building concepts and will have more efficient lighting and environmental systems, native vegetation with water efficient landscaping, and reduced storm water runoff.

G. Energy Efficiency in Lease Provisions.

- **Aberdeen**-- The Area is not pursuing this because we have minimal leased facilities.
- **Albuquerque**-- The Albuquerque Area has nearly 540,000 ft². of space, 3% of which is leased space. Leased facilities are typically small Health Clinics or Health Stations at the various pueblos. These are typically inclusive of existing buildings, which are used for a variety of functions besides health care. When any of these facilities are replaced or new leases are requested, more energy

efficient designs are incorporated into the new facilities.

- **Nashville**-- Local GSA office incorporates these requirements if relocation occurs.

H. Energy-Intensive Facility Efficiency Improvements

- **Aberdeen**-- New DDC control systems were installed at six locations to allow computer controlled heating and cooling systems. DDC systems have proven to be up to 30% more efficient than manually controlled systems.
- **Alaska**-- The Alaska Area has conducting Energy Audits at six of the Area Hospitals, five of which are comprehensive. Energy conservation projects are starting to be implemented at the hospital facilities from the identified saving opportunities.

These projects are being accomplished through our normal project cycle and by bundling identified energy saving measures creating discrete energy conservation projects. These projects are funded through the M&I Resource Allocation Committee (MIRAC), which meets annually to consider projects. The energy consumption for the Alaska Area has decreased slightly in 2003 over 2002 by approximately 22,127 MMBTU's.

At the ANMC Hospital several projects address significant energy savings. This "Replace Electric Snow Melt System" project will replace the existing electric snowmelt system with a hydronic snowmelt system, and is in the design phase. Electric snowmelt requires substantial energy (in February 2001, the electric snowmelt system used an average of 92 kW and a maximum of 347 kW for the month), thus large energy savings would be realized. This project estimates a 7 to 8 year simple payback and a reduction of about \$50,000 in annual energy cost in 2003 dollars.

The "Improve Steam Condensate Return" project added two new heat exchangers to remove heat from the condensate return line of the clean steam generator. The first heat exchanger transfers heat directly to the existing hot water reheat loop. The second heat exchanger transfers any remaining heat to a new glycol loop and two new unit heaters that will reject the unusable heat into the exhaust air stream. Energy savings will be achieved due to offsetting the heat required for the terminal reheat boxes. It is estimated that the energy savings from pre-heating the hot water serving the terminal reheat boxes to be approximately \$27,444 annually.

The "Boiler Upgrade" project installed VFD's on the blower motors in order to control airflow by changing the speed of the forced draft fan. Prior to this upgrade, dampers were used to control airflow into the burner. Oxygen trim controls were installed and a low nitrogen oxide retrofit was implemented on the boilers. There is presently no data to reflect the actual savings. Other projects anticipated investigation for fy04 include cold roof cooling fan controls and cogeneration facilities.

Barrow Hospital, SSMH, plans on upgrading its DDC system to bring it up to date with more current technology and operating system. The project will also integrate the operation of the Griest Center, an outpatient clinic formally owned by the North Star Borough that is attached to the hospital. The new controls system will help better control the temperature and HVAC equipment within the facility. SSMH is also looking at a project to replace the exterior siding;

this project anticipates greater energy efficiency in the building envelope and attains a comfortable temperature patient care areas under the extreme arctic conditions. The facility experiences significant infiltration during winter storms. The new siding will include an infiltration barrier and other measures to tighten the exterior shell. The facility also requires a lighting retrofit to replace the T12 lighting with more energy efficient T8 lighting systems. SSMH projected ECM cost for FY 04 will require approximately \$300K and should yield an energy payback \$25K-30K in annual savings. The approximate \$350K exterior siding project is low energy payback but more of a patient and staff comfort and health care delivery issue.

At Bristol Bay Area Health Corporation about \$290,000 in energy saving projects have been implemented as identified in the comprehensive energy audit conducted in 2002. This resulted in about 3,000 MMBTU's and \$77,000 in annual energy and cost savings. These projects include motor replacements with premium energy saving units, lighting control retrofits, HVAC and DDC modifications to more energy efficient modes, mechanical piping insulation additions, variable speed drive motor control conversions, steam leak repairs and conversion/improvements to VAV in air distribution systems.

At the Nome Hospital NSHC modified the process to eliminate the non-medical waste from the red bag medical waste stream was implemented to reduce the medical waste incineration. The recent purchase of a steam operated medical waste sterilizer will operate from steam from the existing steam boilers and address some of the medical waste stream in a more energy efficient manner; also reducing the load on the oil-fired incinerator as well. Energy savings will be tracked in 2004. Some DDC upgrades required addressing process and controlling inefficiencies that are contributing to higher energy costs in the Hospital and other health program service delivery will be implemented in 2004. YKHC used M&I funds to install a steam condensate return system in 2002. The steam condensate return system was completed in the first quarter of 2003. The reduction in energy consumption has not yet been calculated, but the boiler feed-water meter shows a drastic decrease in make-up water to the system.

YKHC Hospital received \$344,500.00 for ECM projects for FY03. These projects are about 20% complete, including completing the server room HVAC modifications, and the Re-commission Lighting Controls and VFD Retrofit are currently under construction. YKHC also just completed a project to combine their two water treatment systems into a single plant. They will operate the single plant with metered service to all the buildings on the campus. This will reduce water consumption because each production plant sends a percentage of water to waste as a part of the treatment process. Centralizing operations will minimize this waste and help YKHC monitor consumption across the campus.

SEARHC and Maniilaq hospitals have not changed their reported plans as of this writing. SEARHC is addressing ECM's identified in their Comprehensive Energy Audit along with other projects within the hospital.

- **Albuquerque**-- An A/E Company is under contract with the Mescalero Hospital to replace the boiler system with a more efficient system.

- **Bemidji**-- Boilers were converted from fuel oil to natural gas. Cast iron boilers were replaced with energy efficient staged boiler systems. Lamps and ballasts were replaced with lower energy use models. DDCs were installed and air treatment was regulated. Variable speed HVAC units were installation that used digital controls.
- **Billings**-- Automated control valves are being installed for each of the four boilers and both chillers at the Lame Deer Health Center to reduce gas and electrical consumption. The Ft. Belknap Hospital and the Hays Health Center are currently having their automated building control systems reprogrammed to optimize the use of outside air.
- **Oklahoma City**-- A study was performed in a prior fiscal year at the W.W. Hastings Indian Hospital in Tahlequah to determine the adequacy of both the mechanical and electrical systems and the findings of this study will be considered to set priorities and make decisions on future equipment upgrades. Windows at the Creek Nation Community Hospital were replaced in FY 03. The windows in the eye clinic, general medical clinic, and the north wing of the hospital were installed in 1948 while the windows in the medical records area and the west wing of the hospital were installed in 1968. A total of 52 single pane windows with steel sashes were replaced with double pane tinted glass windows and thermally broken aluminum frames. Windows with half screens were provided for patient rooms. The following was accomplished in FY03 at the Claremore Indian Hospital: (2) 400 ton constant speed centrifugal chillers operating at approximately .864 kW per ton were replaced with (2) 300 ton variable speed centrifugal chillers operating at .646 kW per ton; (1) 2,442 gallon per minute two-cell 800 ton cooling tower with (2) 25 hp constant speed fan motors was replaced with (1) 1,800 gallon per minute two-cell 600 ton cooling tower with (2) 20 hp variable speed drive fan motors; (2) 1221gallon per minute 20 hp constant speed condenser water pumps were replaced with (2) 900 gallon per minute 10 hp constant speed condenser water pumps; (2) 630 gallon per minute 40 hp constant speed chilled water pumps were replaced with (2) 600 gallon per minute 7.5 hp constant speed chiller (primary) water pumps and (2) 1,100 gallon per minute 50 hp variable speed drive building distribution (secondary) pumps with only one operating at a time; and 3-way control valves at air-handling units #3,4, and 1A were replaced with 2-way control valves. Benefits of this major chilled water plant upgrade include a more consistent condenser water supply temperature to the chiller and a much better ability to efficiently provide the amount of cooling needed at part load which is where this building operates most of the hours of the year.
- **Phoenix**-- Phoenix Area has completed most energy saving opportunities identified in earlier energy audits.
- **Tucson**-- In FY 2003, work began on an energy audit that will incorporate LEED for Existing Building criteria. It is anticipated that projects will be identified in 2004 and incorporated into new and existing projects.

I. Highly Efficient Systems.

- **Alaska**-- A ground water cooling project is currently in construction at the Alaska Native Medical Center in Anchorage (ANMC) and is anticipated to complete in FY03. The energy savings is anticipated to reflect in an approximate \$50,000 annual savings to the ANMC.
- **Albuquerque**-- All phases of the renovation at the Albuquerque Hospital to replace the old boiler/chiller system with a geothermal ground source heat pump loop system is complete. The new HVAC/DDC system has now switched over to a new web based system.
- **Billings**-- Quarters at Lame Deer are being converted from electrical heat to propane gas. Phase I & II are complete and Phase III is scheduled for 2003.
- **Oklahoma City**-- Local natural resources were identified and a vertical closed-loop ground source heat pump system was designed for the new Pawnee Health Center, which enables this facility to take advantage of the natural heat stored underground to provide space conditioning. Status indicators for this system are from positive feedback monitoring devices.
- **Phoenix**-- Installed a flat plate heat exchanger at Whiteriver hospital.

J. Off-Grid Generation.

- **Bemidji**-- Installation of off-grid power generation at White Earth Health Center was proposed for 2003.
- **Oklahoma City**-- Although no off-grid generation capability was installed in the OKC Area, Oklahoma State University graduate students identified installation of a small wind turbine during an energy audit of the Pawnee Health Center. Energy savings were estimated at 17,958 kWh per year with dollar savings estimated at \$1,491 per year with an implementation cost of \$36,000 resulting in a 24-year payback period for this small wind turbine.

K. Electrical Load Reduction Measures.

- **Albuquerque**-- Each service unit has emergency load reduction plans for their facilities.
- **Oklahoma City**-- Emergency generators are available. Manual transfer switches could be used to power more, but not all, of a health facility in the event of a power emergency.
- **Phoenix**-- The area office will alert all service units within the area when energy reduction is needed. The service units will load the emergency generators, adjust thermostats, shut down all unnecessary and nonessential equipments, turn off lights, etc.
- **Portland**-- Upon notification of a power emergency. The Portland Area Office will alert all Federal IHS Facilities within the Portland Area. The facilities will adjust building temperatures; turn off lights, and shutting down other nonessential equipment.

- **Tucson**-- During power emergencies, all non-essential personnel will be dismissed and power consumption in affected buildings greatly reduced. The critical facilities will remain operational but with temperature thermostats adjusted to reduce energy.

IV. Data Tables and Inventories. (See Attachments)

- A.** FY 2003 OPDIV Energy Management Data Report.
- B.** OPDIV FY 2003 Energy Scorecard.
- C.** Industrial and Laboratory Facilities Inventory.

Attachment A

FY 2003 OPDIV Energy Management Data Report

FY 2003 OPDIV ENERGY MANAGEMENT DATA REPORT

OPDIV: Indian Health Service
 Date: 11/13/2003

Prepared by: Allen Bollinger
 Phone: 301-443-1367

PART 1: ENERGY CONSUMPTION AND COST DATA

1-1. Standard Buildings/Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Unit Cost (\$)	Site-Delivered Btu (Million)	Est. Source Btu (Million)	Est. Carbon Emissions (Metric Tons)
Electricity	kWH	0.0	\$0.0	#DIV/0! /kWh	0.0	0.0	0
Fuel Oil	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0.0	0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	#DIV/0! /Thou Cu Ft	0.0	0.0	0
LPG/Propane	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.0	\$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	
		Total Costs:	\$0.0	Total:	0.0	0.0	0
Standard Buildings/Facilities (Thou. Gross Square Feet)		0.0		Btu/GSF:	#DIV/0!	#DIV/0!	

1-2. Industrial, Laboratory, Research, and Other Energy-Intensive Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Unit Cost (\$)	Site-Delivered Btu (Million)	Est. Source Btu (Million)	Est. Carbon Emissions (Metric Tons)
Electricity	kWH	139,466,257.0	\$9,801.0	0.070275063 /kWh	475,858.9	1,442,917.9	21,956
Fuel Oil	Thou. Gal.	1,271.0	\$1,676.0	\$1.32 /gallon	176,288.0	176,288.0	3,517
Natural Gas	Thou. Cubic Ft.	529,351.0	\$2,004.0	\$3.79 /Thou Cu Ft	545,761.0	545,761.0	7,897
LPG/Propane	Thou. Gal.	1,185.0	\$855.0	\$0.72 /gallon	113,168.0	113,168.0	1,923
Coal	S. Ton	0.0	\$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	
		Total Costs:	\$14,336.0	Total:	1,311,075.9	2,278,134.9	35,293
Energy-Intensive Facilities (Thou. Gross Square Feet)		6,568.0		Btu/GSF:	199,616	346,854	

1-3. Exempt Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Unit Cost (\$)	Site-Delivered Btu (Million)	Est. Source Btu (Million)	Est. Carbon Emissions (Metric Tons)
Electricity	kWH	0.0	\$0.0	#DIV/0! /kWh	0.0	0.0	0
Fuel Oil	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0.0	0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	#DIV/0! /Thou Cu Ft	0.0	0.0	0
LPG/Propane	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.0	\$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
		Total Costs:	\$0.0	Total:	0.0	0.0	0
Exempt Facilities (Thou. Gross Square Feet)		0.0		Btu/GSF:	#DIV/0!	#DIV/0!	

1-4. Tactical Vehicles and Other Equipment

	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Unit Cost (\$)	Btu (Million)	Est. Carbon Emissions (Metric Tons)
Auto Gasoline	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Diesel-Distillate	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
LPG/Propane	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Aviation Gasoline	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Jet Fuel	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Navy Special	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Other	Thou. Gal.	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0
		Total Costs	\$0.0		0.0	0

1-5. WATER CONSUMPTION, COST AND EFFICIENCY MEASURES

	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)
Water	Million Gal.	205.0	\$441.0
Best Management Practice Implementation Tracking Data			
Number of facilities* in OPDIV inventory		168	
Number of facilities with completed water management plans		0	
Number of facilities with at least four (4) BMPs fully implemented		0	
*number in the OPDIV inventory, can be buildings, bases, or campuses			

Install Prop_type = G & Bldg
Owner = GOV

1-6. RENEWABLE GREEN ENERGY PURCHASES

(Only include renewable energy purchases developed or contracted after 1990)

	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)
Electricity from Renewables	kWH	0.0	\$0.0
Natural Gas from Landfill/Biomass	MMBtu	0.0	\$0.0
Renewable Thermal Energy	MMBtu	19,087.0	\$183.0
Other Renewable Energy_____*			

*For other renewable energy that does not fit any category, please fill in the type, units used, annual consumption and cost, and include any additional information in your narrative submission. For example, biodiesel used in non-transportation applications. (Renewable fuels used for transportation will be collected through GSA's Fleet Management reporting process.)

1-7. SELF-GENERATED RENEWABLE ENERGY INSTALLED AFTER 1990

	Consumption Units	Total Annual Energy	Energy Used by Agency*
Electricity from Renewables	kWH	0.0	0.0
Natural Gas from Landfill/Biomass	MMBtu	0.0	0.0
Renewable Thermal Energy**	MMBtu	0.0	0.0
Other Renewable Energy_____***		0.0	0.0

*Energy used by OPDIV equals total annual generation unless a project sells a portion of the energy it produces to another agency or the private sector. It can equal zero in the case of non-Federal energy projects developed on Federal land.

**Examples are geothermal, solar thermal, and geothermal heat pumps, and the thermal portion of combined heat and power projects. Thermal energy from geothermal heat pumps should be based on energy savings compared to conventional alternatives.

***For other renewable energy that does not fit any category, fill in the type, units used, annual consumption and cost, and include any additional information in your narrative submission. For example energy displaced by daylighting technology or passive solar design.

PART 2: ENERGY EFFICIENCY IMPROVEMENTS**2-1. DIRECT AGENCY OBLIGATIONS**

	FY 2003		Projected FY 2004	
	(MMBTU)	(Thou. \$)	(MMBTU)	(Thou. \$)
Direct obligations for facility energy efficiency improvements, including facility surveys/audits		\$1,163.5		\$3,086.0
Estimated annual savings anticipated from obligations	15,524.0	\$260.0	30,000.0	\$395.0

2-2. ENERGY SAVINGS PERFORMANCE CONTRACTS (ESPC)

	Annual savings (MMBTU)	(number/Thou. \$)
Number of ESPC Task/Delivery Orders awarded in fiscal year & annual energy (MMBTU) savings.	23,374.0	1 / \$1,900
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.		\$58.0
Amount privately financed under ESPC Task/Delivery Orders awarded in fiscal year.		\$381.0
Cumulative guaranteed cost savings of ESPCs awarded in fiscal year relative to the baseline spending.		\$0.0
Total contract award value of ESPCs awarded in fiscal year (sum of contractor payments for debt repayment, M&V, and other negotiated performance period services).		\$288.0
Total payments made to all ESP contractors in fiscal year.		\$288.0

2-3. UTILITY ENERGY SERVICES CONTRACTS (UESC)

	Annual savings (MMBTU)	(number/Thou. \$)
Number of UESC Task/Delivery Orders awarded in fiscal year & annual energy (MMBTU) savings.	0.0	0
Investment value of UESC Task/Delivery Orders awarded in fiscal year.		\$0.0
Amount privately financed under UESC Task/Delivery Orders awarded in fiscal year.		\$0.0
Cumulative cost savings of UESCs awarded in fiscal year relative to the baseline spending.		\$0.0
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services).		\$0.0
Total payments made to all UESC contractors in fiscal year.		\$0.0

2-4. UTILITY INCENTIVES (REBATES)

	Annual savings (MMBTU)	(Thou. \$)
Incentives received and estimated energy savings	0.0	\$0.0
Funds spent in order to receive incentives		\$0.0

2-5. TRAINING

	(number)	(Thou. \$)
Number of personnel trained/Expenditure	29.0	\$26.0

Attachment B

OPDIV FY 2003 Energy Scorecard

FY 2003 OPDIV Energy Scorecard

OPDIV Name	Contact Name and Phone
Indian Health Service	Allen Bollinger 301-443-1367
Name of Senior Energy Official	Signature of Senior Energy Official
Kevin Stover, P.E.	

Did your OPDIV . . .	Yes	No	Anticipated Submittal Date
1. Submit its FY 2003 energy report to OS by January 1, 2004 (Sec. 303)?	X		November 14, 2003
2. Submit a FY 2004 Implementation Plan by January 1, 2004 (Sec. 302)?	X		November 14, 2003
Did your OPDIV . . .	Yes	No	Comments
3. Implement or continue to use renewable energy projects at Federal installations or facilitate the siting of renewable generation on Federal land in FY 2003 (Sec. 204)? (Report all self-generated renewable energy from projects installed after 1990; refer to Table 1-7 on the Energy Management Data Report)	X		<p>If yes, how many projects and how much energy generated? (Specify unit: MWH or MMBtu)</p> <p>Solar In use amount unknown</p> <p>Wind _____</p> <p>Thermal¹ In use amount unknown</p> <p>Biomass _____</p> <p>Other RE _____</p>
4. Purchase energy generated from new renewable energy sources in FY 2003 (Sec. 204)? ²	X		<p>If yes, how much: _____ MWH</p> <p>or <u>19,807</u> MMBtu</p>
5. Invest direct FY 2003 appropriations in projects contributing to the goals of the Order (Sec. 301)?		X	<p>If yes, how much: \$ _____</p>
6. Specifically request funding necessary to achieve the goals of the Order in its FY 2005 budget request to OMB (Sec. 301)? (Refer to OMB Circular A-11, Section 25.5, Table 2)		X	<p>If yes, how much: \$ _____</p>
7. Perform energy audits of 10% of its facility space during the fiscal year (Sec. 402)?	X		<p>What percentage of facility space was audited during the FY? <u>11</u> %</p> <p>How much facility space has been audited since 1992? <u>78</u> %</p>
8. Issue to private-sector energy service companies (ESCOs) any energy savings performance contract (ESPC) task orders (Sec. 403(a))? (Refer to Table 2-2 on the Energy Management Data Report)	X		<p>How many? <u>1</u></p> <p>Annual savings (MMBtu): <u>23,374</u></p> <p>Total investment value³: \$ <u>1.9 Mil</u></p> <p>Cumulative guaranteed cost savings: <u>\$669,000</u></p> <p>Contracts award value: <u>\$288,000</u></p>

¹ Examples are geothermal, solar thermal, and geothermal heat pumps. Thermal energy from geothermal heat pumps should be determined as follows: Thermal energy = Total geothermal heat transferred – electrical energy used.

² “New” renewable energy means sources developed after 1990.

³ Investment value includes design, materials, labor, overhead, and profit but excludes contractor’s financing costs and government’s administration costs. Using investment value allows comparison with other traditional execution methods such as appropriated and working capital funded projects.

Did your OPDIV . . .	Yes	No	Comments
9. Issue any utility energy services contract (UESC) task orders (Sec. 403(a))? (Refer to Table 2-3 on the Energy Management Data Report)		X	How many? _____ Annual savings (MMBtu): _____ Total investment value ³ : \$ _____ Cumulative cost savings: \$ _____ Contracts award value: \$ _____
10. Incorporate energy efficiency requirements into relevant acquisitions (Sec. 403(b)(3))?	X		
11. Adopt and apply the sustainable design principles (e.g., Whole Building Design Guide, Leadership in Energy and Environmental Design (LEED)) to the siting, design, and construction of new facilities or major (budget line item) renovations begun in FY 2003 (Sec. 403(d))?	X		Number of new building design/construction projects in FY 2003: <u>5</u> Number of these projects that can or will be certified under LEED: <u>5</u>
12. Provide training to appropriate personnel ⁴ on energy management (Sec. 406(d))?	X		Number of appropriate personnel trained: <u>29</u> Total number of appropriate personnel: <u>250</u>
13. Implement any additional management tools (Sec. 406)?	X		Check all that apply: Awards: <u>X</u> Performance Evaluations: <u>X</u> Showcase Facilities: <u>X</u> Number of Showcase Facilities designated in fiscal year: <u>0</u>
14. Establish Water Management Plans (WMPs) and implement at least 4 Best Management Practices (BMPs) in at least 10% of agency facilities (Sec. 207,503(f))?		X	Number of facilities with WMPs and 4 BMPs: <u>0</u> Number of facilities in agency inventory: <u>168</u>

NOTE: Provide additional information if a "No" reply is used for any of the questions above.

Please enter data from annual energy report pertinent to performance toward the goals of Executive Order 13123	Base Year	Previous Year (2002)	Current Year (2003)	% Change (Current vs. Base)
15. Site Energy Efficiency Improvement Goals (Sec. 202). 1985 Base Year	Btu/Ft ²	Btu/Ft ²	Btu/Ft ²	%
16. Source Energy Use (Sec. 206). 1985 Base Year	BBtu	BBtu	BBtu	%
17. Industrial/Energy Intensive Facilities Goals (Sec. 203). 1990 Base Year	242,633 Btu/ Ft ²	207,691 Btu/ Ft ²	199,616 Btu/ Ft ²	18 %
18. Water Conservation Goal (Sec. 207). 2000 Base Year	MGal	N/A	250 MGal	%
19. Renewable Energy (Sec. 204) Energy used from self-generation and RE purchases	N/A	MMBtu	19,807 MMBtu	N/A

Abbreviation Key: Btu/Ft² = British thermal units per gross square foot
 Btu/unit = British thermal units per unit of productivity (or gross square foot when such a unit is inappropriate or unavailable)
 MGal = Million gallons
 MMBtu = Million British Thermal Units

⁴ Appropriate personnel include the agency energy management team as well as Federal employees and on-site contractors who are energy or facility managers, operations and maintenance workers, design personnel, procurement and budget staff, and legal counsel.

BBtu = Billion British Thermal Units
RE = Renewable energy
N/A = Not applicable

Attachment C

Industrial and Laboratory Facilities Inventory

Area	Installation Name	State	City	GSF	Next Energy Audit	Last Energy Audit	Energy Audit Team
AB	QUENTIN N BURDICK MEMORIAL HOS	ND	BELCOURT	199864.6	2013	1995	SDStateUniv
AB	PHS Indian Health Station	ND	CANNON BALL	1380			
AB	PHS Indian Health Center	ND	FORT TOTTEN	22712.3	2010		
AB	PHS Indian Hospital	ND	FORT YATES	93332.1	2005	1995	SDStateUniv
AB	PHS Indian Health Station	ND	MANDAREE	1381			
AB	PHS Indian Health Center	ND	NEW TOWN	43011.8	2008	1995	SDStateUniv
AB	PHS Indian Health Station	ND	TWINBUTTES	1380.4			
AB	PHS Indian Hospital	NE	WINNEBAGO	52896.2	2016	1997	ES-S contractor: Sys-Tek, P.A.
AB	PHS Indian Health Station	SD	ALLEN	960			
AB	PHS Indian Health Station	SD	BULLHEAD	960			
AB	PHS Indian Health Station	SD	CHERRY CREEK	3264			
AB	PHS Indian Hospital	SD	EAGLE BUTTE	79634.7		2002	ROFEC VIII
AB	PHS Indian Health Center	SD	FORT THOMPSON	35114.1	2006	1995	SDStateUniv
AB	PHS Indian Health Center	SD	KYLE	47202.3	2009	1995	SDStateUniv
AB	PHS Indian Health Center	SD	LOWER BRULE	16232	2006		
AB	PHS Indian Health Station	SD	MANDERSON	1856			
AB	PHS Indian Health Center	SD	MCLAUGHLIN	19228.5	2005	1983	ROFEC-DENVER
AB	PHS Indian Hospital	SD	PINE RIDGE	201704.8	2012		
AB	PHS Institutional Support Fac	SD	PINE RIDGE	298177		1995	SDStateUniv
AB	PHS Indian Hospital	SD	RAPID CITY	191194	2015	1982	ROFEC VIII
AB	PHS Indian Health Station	SD	RED SCAFFOLD	960		1982	ROFEC VIII
AB	PHS Indian Hospital	SD	ROSEBUD	197583.6	2014		
AB	PHS Institutional Support Fac	SD	ROSEBUD	284753.5			
AB	PHS Indian Hospital	SD	SISSETON	158786.6	2017	1995	SDStateUniv
AB	PHS Indian Health Station	SD	SWIFTBIRD	1920			
AB	IHS Wagner Health Center	SD	WAGNER	44644.4	2007	1995	SDStateUniv
AB	ABERDEEN AREA YRTC	SD	WAKPALA	31483.7	2011		
AB	PHS Indian Health Station	SD	WAKPALA	3839.5			
AB	PHS Indian Health Center	SD	WANBLEE	23838.6	2005	1983	ROFEC VIII
AB	PHS Indian Health Station	SD	WHITE HORSE	2368			
AK	PHS Indian Medical Center	AK	ANCHORAGE	384271.8	2007	2002	NA EMCOR & ANTHC
AK	PHS Institutional Support Fac	AK	ANCHORAGE	12722			
AK	ANIAK HEALTH CTR	AK	ANIAK	1288	1999		
AK	PHS Indian Hospital	AK	BARROW	107078.5	2007	2002	NA EMCOR & ANTHC

Area	Installation Name	State	City	GSF	Next Energy Audit	Last Energy Audit	Energy Audit Team
AK	PHS Indian Hospital	AK	BETHEL	254510.2	2007	2002	
AK	Kanakanak IHS Hospital	AK	DILLINGHAM	143117.3	2006	2001	PDC Inc & ANTHC
AK	PHS Indian Health Station	AK	GAMBELL	1048	1998		
AK	PHS Indian Health Station	AK	HOOPER BAY	1048			
AK	ALASKA NATIVE HOSPITAL	AK	KOTZEBUE	82410.7	2005	2000	RSA Eng. & ANTHC
AK	KIC Quarters Site	AK	KOTZEBUE	57705.6			
AK	Kotzebue Older Qtrs	AK	KOTZEBUE	70887		1980	ROFEC-X, CON
AK	NANA Quarters Site	AK	KOTZEBUE	19991.9			
AK		AK	NOME	841			
AK	PHS Indian Health Station	AK	NOORVIK	884	2005		
AK		AK	NULATO	910			
AK	PHS Indian Health Station	AK	SAVOONGA	884	1998		
AK	PHS Indian Health Station	AK	SELAWIK	884	2005		
AK	Mt. Edgecumbe IHS Hospital	AK	SITKA	212714.8	2007	2002	PDC,Inc. & ANTHC
AK	PHS Indian Health Station	AK	TANANA	55772			
AK	PHS Indian Health Station	AK	UNALAKLEET	1400			
AQ	PHS Indian Hospital	NM	ALBUQUERQUE	79610.9	2004	1981	A/E Contractor
AQ	PHS Indian Health Center	NM	DULCE	15625			New facility under design
AQ	IHS IND HEALTH CENTER	NM	JEMEZ PUEBLO	896			
AQ	PHS Indian Health Station	NM	LAGUNA	6628	2007	1997	A/E Contractor
AQ	PHS Indian Health Center	NM	MAGDALENA	11534.7			
AQ	PHS Indian Hospital	NM	MESCALERO	40808	2007	1997	A/E Contractor
AQ	PHS Indian Health Station	NM	SAN FELIPE PUEBLO	2440			
AQ	NEW SUNRISE REG TREATMENT CTR	NM	SAN FIDEL	15224	2007	1997	A/E Contractor
AQ	PHS Indian Hospital	NM	SAN FIDEL	111615	2007	1997	A/E Contractor
AQ	PHS Indian Hospital	NM	SANTA FE	103113.7	2007	1997	A/E Contractor
AQ	PHS Indian Health Station	NM	SANTO DOMINGO PUEBLO	3528			
AQ	PHS Indian Health Center	NM	SIPI	13987			
AQ	PHS Indian Health Center	NM	TAOS PUEBLO	19981.32	2007	1997	A/E Contractor
AQ	PHS Indian Hospital	NM	ZUNI	106899.6	2007	1997	A/E Contractor
BE	PHS Indian Hospital	MN	CASS LAKE	57874.1	1997	1994	Martell&Asso
BE	PHS Indian Health Center	MN	NAYTAHWAUSH	6145	1998		
BE	PHS Indian Health Center	MN	PONEMAH	6492	1999	1994	Martell&Asso
BE	PHS Indian Health Center	MN	PONSFORD	3109.6	1998		

Area	Installation Name	State	City	GSF	Next Energy Audit	Last Energy Audit	Energy Audit Team
BE	CHIEF LEADING FEATHER HOSPITAL	MN	RED LAKE	82902.3	1999	1994	Martell&Asso
BE	PHS Indian Health Center	MN	WHITE EARTH	51088.4			
BE	PHS Institutional Support Fac	MN	WHITE EARTH	56024	1998		
BI	PHS Indian Hospital	MT	BROWNING	257567.7	2008	2001	DOE
BI	PHS Indian Hospital	MT	CROW AGENCY	164167.75	2008	2003	ROFEC, DOE
BI	PHS Indian Hospital-FT BELKNAP	MT	HARLEM	99952.35	2008	2003	DOE
BI	PHS Indian Health Center	MT	HAYS	38454.5	2004		
BI	PHS Indian Health Center	MT	HEART BUTTE	9002.4	2005	1982	ROFEC
BI	No. Cheyenne Health Ctr	MT	LAME DEER	107716.05	2008	2003	ROFEC VIII, DOE
BI	Quarters Compound	MT	LODGE GRASS	11716	2008	2003	Eng Services
BI	PHS Institutional Support Fac	MT	POPLAR	23472	2004		
BI	PHS Indian Health Center	MT	PRYOR	19597	2008	2003	ROFEC
BI	PHS Institutional Support Fac	MT	ROCKY BOYS	13441.2	2005		
BI	PHS Indian Health Center	MT	WOLF POINT	20610	2004		
BI	PHS Indian Health Center	WY	ARAPAHOE	25472	2008	2003	
BI	PHS Institutional Support Fac	WY	FORT WASHAKIE	31488.5	2008	2003	Eng Services
NS	PHS Indian Health Station	MS	CARTHAGE	2440	2002		
NS	PHS Indian Hospital	MS	PHILADELPHIA	58000	2002	1986	Energy Services
NS	PHS Institutional Support Fac	MS	PHILADELPHIA	6572	2002		
NS	NASHVILLE AREA ADMINISTRATION	NC	CHEROKEE	2400	2002		
NS	NASHVILLE AREA YRTC	NC	CHEROKEE	13331	2002		
NS	PHS Indian Hospital	NC	CHEROKEE	93116	2002	1986	Garratech
NV	PHS Indian Hospital	AZ	CHINLE	387594.1	1999	1979	HEMSLEY LEE
NV	PHS Indian Health Station	AZ	DENNEHOTSO	1262		1983	ROFEC IX
NV	PHS Indian Health Station	AZ	DILKON	4016			
NV	PHS Indian Hospital	AZ	FORT DEFIANCE	469786.5			
NV	PHS Indian Health Station	AZ	GREASEWOOD	2526		1979	ROFEC IX
NV	PHS Indian Health Station	AZ	HOTEVILLA DINNEBITO	1262		1979	HEMSLEY LEE
NV	PHS Indian Health Center	AZ	INSCRIPTION HOUSE	53005	1999		
NV	PHS Indian Health Center	AZ	KAYENTA	99457.2	1999	1979	HEMSLEY LEE
NV	PHS Indian Health Station	AZ	LEUPP	3592			
NV	PHS Indian Health Center	AZ	MANY FARMS ROUGH ROCK	29436	1999	1979	HEMSLEY LEE
NV	PHS Indian Health Station	AZ	MANY FARMS ROUGH ROCK	1265			
NV	PHS Indian Health Station	AZ	PINON	6737	1999	1979	HEMSLEY LEE

Area	Installation Name	State	City	GSF	Next Energy Audit	Last Energy Audit	Energy Audit Team
NV	PHS Indian Health Station	AZ	ROCK POINT	3300			
NV		AZ	SHONTO	3326			
NV	PHS Indian Health Center	AZ	TEEC NOS POS	9983			
NV	PHS Indian Health Center	AZ	TSAILE	57542.8	1999		
NV	PHS Indian Hospital	AZ	TUBA CITY	532377.4	1998		
NV	PHS Institutional Support Fac	AZ	WINDOW ROCK	43971		1983	ROFEC IX
NV	PHS Indian Health Center	AZ	WINSLOW	48981.8	2000		
NV	PHS Indian Health Station	NM	CROWNPOINT PUEB PINT	5205	1997		
NV	PHS Indian Hospital	NM	CROWNPOINT PUEB PINT	210919	1997		
NV	PHS Indian Health Center	NM	FORT WINGATE	7656	1999		
NV	PHS Indian Medical Center	NM	GALLUP	336469.2	1998		
NV	PHS Indian Health Center	NM	HUERFANO (NAGEEZI)	37306	1999		
NV	PHS Indian Health Center	NM	SANOSTEE	2528			
NV	NORTHERN NAVAJO MEDICAL CENTER	NM	SHIPROCK	270646.2			
NV	PHS Institutional Support Fac	NM	SHIPROCK	142389	1999		
NV	PHS Indian Health Station	NM	TOADLENA	1262			
NV	PHS Indian Health Center	NM	TOHATCHI	46842			
OK	PHS Indian School Health Ctr	KS	LAWRENCE	16991.6	2004		OK State Univ. graduate students
OK	PHS Indian Health Center	OK	ANADARKO	20000	2008	2003	EMC (DoE SAVEnergy Audit)
OK	PHS Indian Hospital	OK	CLAREMORE	109726.8	2004	1980	OK State Univ. graduate students
OK	PHS Indian Hospital	OK	CLINTON	38437.3	2004	1985	OK State Univ. graduate students
OK	PHS Indian Hospital	OK	LAWTON	88969	2008	2003	EMC (DoE SAVEnergy Audit)
OK	PHS Indian Health Center	OK	PAWNEE	96968.7	2004	1996	OK State Univ. graduate students
OK	Redbird Smith Health Center	OK	SALLISAW	22930			
OK	Wilma P. Mankiller Health Ctr	OK	STILWELL	37359			
OK	PHS Institutional Support Fac	OK	TAHLEQUAH	9410	2004		OK State Univ. graduate students
OK	W. W. Hastings Hospital	OK	TAHLEQUAH	149983	2004	1995	OK State Univ. graduate students
OK	PHS Institutional Support Fac	OK	TALIHINA	157730		1985	CONSULTANT

Area	Installation Name	State	City	GSF	Next Energy Audit	Last Energy Audit	Energy Audit Team
PH	PHS Indian Health Center	AZ	BYLAS	2136			
PH	PHS Indian Health Station	AZ	CASA BLANCA (GRANDE)	1320			
PH	PHS Indian Health Center	AZ	CIBECUE	13099.7		1983	ROFEC IX
PH	PHS Indian Health Station	AZ	HOTEVILLA DINNEBITO	702			
PH	DENTAL CLINIC	AZ	JEDDITO	2262			
PH	PHS Institutional Support Fac	AZ	KEAMS CANYON	106842.6			
PH	PHS Indian Health Center	AZ	LAVEEN	2900	2006		
PH	PHS Indian Hospital	AZ	PARKER	105053.8	2007	1982	ROFEC IX
PH	PHS Indian Health Center	AZ	PEACH SPRINGS	21270			
PH	PHS Indian Medical Center	AZ	PHOENIX	279901.4	2007	2001	EME GROUP
PH	Hopi Health Center	AZ	POLACCA	96840			
PH	GILA RIVER YRTC	AZ	SACATON	39561	2006		
PH	PHS Indian Hospital	AZ	SACATON	136117	2006		
PH	PHS Indian Hospital	AZ	SAN CARLOS	91523	2007	2001	EME GROUP
PH	PHS Indian Health Station	AZ	SUPAI CANYON	5744	2007		
PH	PHS Indian Hospital	AZ	WHITERIVER	241386.9	2007	2001	EME GROUP
PH	PHS Indian School Health Ctr	CA	RIVERSIDE	3700			
PH	PHS Indian Hospital	CA	WINTERHAVEN	21766	2006	1982	ROFEC IX
PH	PHS Indian Health Center	NV	MCDERMITT	2590		1983	ROFEC IX
PH	PHS Indian Health Station	NV	MOAPA	7187.5			
PH	PHS Indian Hospital	NV	OWYHEE	84314	2007	2001	EME GROUP
PH	PHS Indian Health Center	NV	SCHURZ	34352			
PH	PHS Indian Health Center	UT	FORT DUCHESNE	31811.7	2007	2001	EME GROUP
PO	PHS Indian Health Center	ID	FORT HALL	31076	2007	2003	Saiyid Engineering
PO	PHS Indian Health Center	OR	CHEMAWA (Salem)	23124	2008	2003	ES-S
PO	PHS Indian Health Center	OR	WARM SPRINGS	12058	2007	1997	ES-S
PO	PHS Indian Health Center	WA	BELLINGHAM	792		1992	Contractor
PO	PHS Indian Health Center	WA	NEAH BAY	20330.5	2010	2003	Saiyid Engineering
PO	PHS Indian Health Center	WA	NESPELEM	26088.5	2006	1997	ES-S
PO	HEALING LODGE OF THE SEVEN NAT	WA	SPOKANE	30999.56	2005	1995	ES
PO	PHS Indian Health Center	WA	TACOMA	88956	2007	2002	Tacoma Light and Power
PO	PHS Indian Health Center	WA	TOPPENISH	51772	2008	2003	Saiyid Engineering
PO	TULALIP DENTAL CLINIC	WA	TULALIP	1960	2008	2003	Bldg Manufacturer
PO	PHS Indian Health Center	WA	WELLPINIT	26024.3	2009	2003	Saiyid Engineering
TU	PHS Indian Health Station	AZ	PISINEMO	1134			

Area	Installation Name	State	City	GSF	Next Energy Audit	Last Energy Audit	Energy Audit Team
TU	PHS Tucson Area Office	AZ	SAN XAVIER	54802.4	2004	1982	ROFEC IX
TU	PHS Indian Health Center	AZ	SANTA ROSA	3733	2004	1982	ROFEC IX
TU	PHS Indian Hospital	AZ	SELLS	152092.3	2004	1991	Harrington

FY 2004 Annual Energy Implementation Report

I. Management and Administration

A. Energy Management Infrastructure

1. **Senior Agency Official:** The senior Agency Official is the Director, Division of Facilities Operations. This person supervises the Agency's Energy Coordinator.

2. The Agency Energy Team consists of 12 Area Offices (Aberdeen, Albuquerque, Alaska, Bemidji, Billings, California, Nashville, Navajo, Oklahoma City, Portland, Phoenix, and Tucson) and 2 Regional Offices (Engineering Service (ES) in Dallas and Seattle). The 12 Area Offices and 2 Engineering Services Offices each have a designated Energy Coordinator who is supervised by the Area Facility Engineers or ES Directors.

3. Area Office Energy Program:

- **Aberdeen**-- The Area mechanical engineer will continue to monitor energy consumption on a monthly basis. The energy data will be discussed with each Facility Manager on a quarterly basis. These discussions will be the start of an Area wide energy awareness campaign.
- **Alaska**-- Alaska employs an Area energy coordinator to collect and report data to the Regional Health Organizations (RHO's) and IHS Headquarters. The coordinator seeks energy saving program and project opportunities and works directly with the RHO Facility Managers to implement energy conservation measures and training. The Alaska Area has concluded six energy audits (five comprehensive in nature) out of the seven hospital campuses serving Alaska Natives and American Indians in Alaska. These audits identified \$2,400,000 in Energy Conservation Measures (ECM's) that could potentially save \$588,000 dollars annually. Projects anticipated for the 2003 fiscal year include project identified in III-H above cost that could exceed 20 percent of the Routine Maintenance & Improvement (M&I) budget. Funding for this collective magnitude of cost are being sought outside of the IHS M&I Project Pool, or at least supplemented. The annual energy consumption decreased slightly overall in 2003. This is small decrease results are due primarily to the fact that a great portion of the health care facilities are old and are being brought up to current AHA and ASHRAE Standards. This means greater emphasis on indoor air quality (IAQ) and Air Conditioning; and thus more energy consumption is a natural result of improving these systems in health facilities. Therefore, to a large degree, the ECM's implemented just offset the increase energy requirements for providing the proper patient environment. Some additional energy increases are to be anticipated in the future, since all buildings do not yet meet the IAQ and Air conditioning requirements.
- **Albuquerque**-- The Energy Coordinator continues to coordinate activities with the service units and project engineers. An area energy guideline has been drafted and is still under

consideration for implementation.

- **Phoenix**-- Each Service Unit facility Manager is the energy coordinator for their Service Unit. There nine Service Units. All energy information is transmitted to him. He is responsible for reduction of energy and water consumption. The tribal contracted facilities are not included. The operations of these facilities are autonomous and are not a part of the Phoenix Area Energy program. They only report their annual energy consumption.
- **Tucson**-- The Energy Management Officer works under the direction of the Area Facilities Engineer. Efforts are coordinated thru periodic meetings with the Facility Managers. In FY 2003, work began on an energy audit that will incorporate LEED for Existing Building criteria. It is anticipated that projects will be identified in 2004 and incorporated into new and existing projects.

B. Management Tools

1. Awards:

- **Albuquerque**-- Employees and Service Units will continue to be recognized for their efforts in implementing the executive order and for overall performance. The area director's awards program will also continue to be used as a tool for recognizing HF employees.
- **Billings**-- A new energy cash rewards program will be put in place rewarding facility energy coordinators on the basis of the percent reduced. Also cash awards will be given to anyone that proposes an energy savings project with a payback less than 5 years. The service unit that scores the highest on energy conservation award worksheet will receive as a reward extra Maintenance & Improvement funds.
- **Oklahoma City**-- Nominations from the OKC Area will be considered for the 2003 HHS Energy & Water Management Awards.

2. Performance Evaluations:

- **Aberdeen**-- The Area Office mechanical engineer is responsible for energy management activities as stated in his job description and it is part of his annual performance evaluation. This will continue in FY 2004.
- **Albuquerque**-- The area will review the requirements to determine changes in future evaluations.
- **Tucson**-- Energy conservation elements are included in the position descriptions for facility managers.

3. Training Education:

- **Aberdeen**-- Training and education for energy management will occur in FY 2004 in conjunction with the ESPC measurement and verification of energy reductions at Area facilities. The ESPC contractor, Johnson Controls Inc., will be investigating further energy savings opportunities at Area facilities for

consideration.

- **Albuquerque**-- The area will continue to provide energy management sessions at the annual workshops. Individual training will continue to be provided as necessary.
- **Oklahoma City**-- A mechanical engineer in the OKC Area plans to attend the Comprehensive 5-Day training Program for Energy Managers, sponsored by The Association of Energy Engineers (AEE), in 2004 as partial fulfillment of requirements to maintain his certified energy manager (CEM) credentials. The Area Energy Coordinator may attend a course listed in the FEMP FY2004 Training Catalog and Resource Guide and will encourage facility managers to consider attending one of these courses. One of the real-time distance learning seminars (such as Fundamentals of Lighting Efficiency or Introduction to Power Quality) offered by the AEE may be taken by the Area Energy Coordinator in FY2004.
- **Tucson**-- Training needs are re-assessed continually and training plans submitted annually. Specific courses included HVAC, appliance, and furnace servicing.

4. Showcase Facilities

- **Albuquerque**-- Showcase facilities will be identified and recommended for recognition if applicable.
- **Oklahoma City**-- The new Pawnee Health Center should be considered due to the use of geothermal energy.

II. Implementation Strategies

A. Life-Cycle Cost Analysis.

- **Aberdeen**-- The ESPC included energy savings projects at nine Area facilities. These projects have been analyzed and included in the ESPC to save energy with excellent pay back times. Alaska-- Life cycle cost analysis is a required element for evaluation of all potential energy projects or ECM's. The 10-year simple payback is a go no-go decision tool and the Life cycle cost is used to prioritize the best use of funding. THE MIRAC funding criteria require this method of project evaluation prior to releasing funds for an energy project. Albuquerque-- Life cycle cost analysis will continue to be used on major projects.
- **Tucson**-- Life cycle cost analysis included in building procurement documents. Energy efficiency and maintenance cost estimates are considered when procuring equipment. Currently, the Sells Hospital is in the process of replacing outdated mechanical equipment with high efficiency equipment. This decision was supported with a Facility Condition Assessment that was completed in 2003.

B. Facility Energy Audits: It is estimated that 12% of facility space will be audited in the next year. Priority is given to larger facilities since this is where most significant energy reductions can be achieved.

C. Financing Mechanisms.

- **Aberdeen**-- The Area ESPC with Johnson Controls Inc. is a 15-year contract beginning on October 1, 2001. The initial first year investment by Johnson Controls Inc. is nearly \$2,000,000 to upgrade HVAC equipment and control systems at six locations and lighting retrofits at nine locations. The energy savings at these locations is estimated at 23%.
- **Alaska**-- ESPC's are not the choice of the RHO's in Alaska.
- **Oklahoma City**-- Use of the DOE Super ESPC contract in FY04 for 2 I.H.S. hospitals will continue to be considered but it is unlikely that a contract will be signed.
- **Tucson**-- The Tucson Area applied for joint funding from the DOE for an energy audit. The proposal was denied for 2003 but under consideration in 2004.

D. Energy Star® and Other Energy-Efficient Products.

- **Alaska**-- ANTHC engineers work with the RHO's Facility managers to evaluate project specifications and purchases to insure the most energy efficient models are considered in the procurement process.
- **Albuquerque**-- The area will continue to encourage all staff to consider energy efficiency when procuring and specifying products for construction and renovation.
- **Phoenix**-- With all new projects, procurement of Energy Star and other energy efficient products are incorporated into specifications.
- **Tucson**-- Energy Star products are reviewed for all maintenance and project activities.

E. Energy Star® Buildings.

- **Albuquerque**-- The area will provide further data for the Albuquerque Indian Hospital to determine its eligibility for designation as an energy star building.

F. Sustainable Building Design.

- **Albuquerque**-- Staff will be encouraged to utilize all applicable guidelines and principles regarding energy efficiency into the sighting, design, and construction of new facilities.
- **Oklahoma City**-- We will continue to advocate in FY04 for compliance with ASHRAE/IESNA Standard 90.1-1999 (Energy Standard for Buildings Except Low-Rise Residential Buildings) and it's Addendum J, which took effect Oct. 29, 2001.
- **Phoenix**-- none Aberdeen-- Sustainable building design principles will be considered for future new buildings.
- **Tucson**-- Sustainable design principles are applied to projects to include renovations and new construction.

G. Energy Efficiency in Lease Provisions.

- **Aberdeen**-- The Area is not pursuing this because we have minimal leased facilities.
- **Albuquerque**-- Energy and water efficiency will continue to be considered when renegotiating or extending leases.
- **Oklahoma City**-- We will discuss this in FY04 with our Area Realty Officer and the Lease Contracting Officer.

H. Energy-Intensive Facility Efficiency Improvements.

- **Aberdeen**-- Energy efficiency opportunities will be considered in all related construction projects and equipment replacements beginning in FY 2002. The ESPC contractor will also be researching energy efficiency opportunities for consideration.
- **Albuquerque**-- The service units will be encouraged to explore projects for energy efficiency versus routine repairs/preventive maintenance and to coordinate those opportunities with the area.
- **Oklahoma City**-- A steam boiler will need to be replaced at the W.W. Hastings Indian Hospital in Tahlequah in FY04 and we will be exploring efficiency opportunities when this boiler is replaced.
- **Tucson**-- In FY 2003, work began on an energy audit that will incorporate LEED for Existing Building criteria. It is anticipated that projects will be identified in 2004 and incorporated into new and existing projects.

I. Highly Efficient Systems.

- **Alaska**-- A ground water cooling project is currently in construction commissioning for the Alaska Native Medical Center in Anchorage. Testing will be conducted and verified flow and cooling rates determines in the second quarter of 2004. Construction is complete and this project is anticipated to be fully operational for the 2004-cooling season.
- **Albuquerque**-- Projects to improve the efficiency of existing systems will continue to be pursued.

J. Off-Grid Generation.

- **Alaska**-- YKHC is pursuing a feasibility study for a wind turbine application at the Bethel Hospital and other Yukon Delta community clinics. ANTHC Area Energy Coordinator is assisting in the technical and economic analysis and planning for anticipated project(s).
- **Albuquerque**-- Will continue to take advantage of alternative systems where applicable.
- **Oklahoma City**-- An off-grid alternative is offered by a large electricity provider, Oklahoma Gas & Electric, via 34 wind turbines that generate power that is fed into the OG&E power grid but it is highly unlikely that we will be able to afford the

price premium. The wind power option costs \$.02 per kWh in addition to OG&E's standard charge for electricity and is sold in 100 kWh units. The economics and viability of installing of our own small wind turbine at Pawnee, which was identified in an FY03 energy survey, will be reviewed in FY04 but it is highly unlikely it will be pursued.

K. Renewable Energy Purchases.

- Renewable Energy Purchases will be pursued where economically feasible.

L. Electrical Load Reduction Measures.

- **Alaska**-- Most facilities in Alaska have automatic load management systems to address load reduction during electrical outages/emergencies. Specific measures were implemented at ANMC to reduce non-essential loads to further reduce the peak load of the facility. Similar techniques were accomplished at other hospital locations as well. The DDC systems assist with non-emergency load management also.
- **Albuquerque**-- The area will assist the service units during emergencies. Service unit plans will be reviewed to ensure appropriateness and update as needed.
- **Oklahoma City**-- We plan to review the plans from the 2001 directive that are in place at 3 of our hospitals and investigate opportunities for possible additional measures prior to the FY04 cooling season.
- **Phoenix**-- The area office will alert all service units within the area when energy reduction is needed. The service units will load the emergency generators, adjust thermostats, shut down all unnecessary and nonessential equipments, turn off lights, etc.
- **Tucson**-- During power emergencies, all non-essential personnel will be dismissed and power consumption in affected buildings greatly reduced. The critical facilities will remain operational but with temperature thermostats adjusted to reduce energy.

M. Water Conservation.

- **Alaska**-- Energy audits recently conducted at six of the seven hospitals identified energy conservation measures (ECM's) to include addressing water conservation. ECM's are then bundled together with other projects and accomplished.
- **Albuquerque**-- Will perform assessment and work with the service units to determine possible projects and improvements.
- **Oklahoma City**-- We will attempt to implement 4 of the FEMP Best Management Practices at our facilities in FY04 and we will attempt to model our water efficiency plan so that it is similar to the plan from the National Renewable Energy Laboratory dated January 2003. We plan to also use applicable portions of the Air Force Water Conservation Guidebook, which is referenced in the

NREL water efficiency plan.

- **Tucson**-- The facilities are replacing outdated toilets, faucets, showerheads and other devices with water saving products. The facilities are reviewing watering schedules and desert landscaping to reduce water consumption. Amount of water spent maintaining landscaping is decreasing through more efficient use. Replacement of irrigation system with lower usage system will be accomplished when funding becomes available. Amount of landscaping to be maintained will decrease when proposed replacement facilities come on line.